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Feature Article - The Role of a Business Register in a Statistical System

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Introduction

The collection of good economic statistics requires a comprehensive list of the businesses to be covered by statistical collections.

For most of its economic statistical collections, the ABS uses a master list called the 'business register'. The term 'business' is used in the broadest sense to include most forms of entity engaged in economic activity and therefore includes companies, sole proprietor businesses, self-employed professionals, all government agencies, community service organisations, religious organisations and so on.

The ABS business register records the organisational structure of the businesses and their names and addresses. It also carries information showing whether the businesses are privately owned or government authorities, their industry and their size of operations. Size information (number employed) is particularly important to ensure that samples selected are representative of the range of businesses.

This article explains the central role played by the register in the ABS's economic statistic collections. The main problems faced in keeping the register up to date are discussed, as are the ways in which changes to the register can influence the published statistics.

The ABS has nearly completed a set of major upgrades to the business register. This article discusses some aspects of this upgrading. When the work is completed it will result in lower respondent load, better quality statistics from the collections which use the register as a population framework and the ability to use the register as a major statistical database in its own right.

Definition of a Business

The definition of a business unit is not straightforward. Is each outlet of a retail company a separate unit; are different legal entities within the same enterprise group separate units? Most businesses in Australia are simple single location, single legal entity businesses; these are easy to define and to record on the register. On the other hand, many businesses are more complex, and the level at which a unit is defined may depend on the information you want to collect. Not all information is maintained at all levels of the business. For example, sub-annual employment information tends to be kept at the outlet or location level, whereas sub-annual accounts may only be available for high level management units.

The ABS business register, first developed in the 1960s, was based on a hierarchy of units

largely built around legal structures. Over time there has been an increasing divergence between legal entities and operating entities, especially within large business groups. Often a large enterprise group will divisionalise its operation along lines which do not coincide with the boundaries of its formal legal entities. While annual accounts have to be prepared on a legal entity basis for taxation and other regulatory requirements, detailed operational and sub-annual accounts are often not available at the legal entity level, which may be higher than, lower than, or cut across divisional boundaries.

Consequently, some businesses have had increasing difficulty meeting ABS requirements for data. This has resulted in an increasing respondent load and an inevitable decline in the quality of ABS statistical output. In response, the ABS has recently modified the definition of units recorded on the business register to bring them more in line with the way businesses maintain their operating records.

While legal entities are still recorded on the register, the major units maintained for statistical reporting purposes are now the enterprise group, the management unit, the establishment and the location. The definition of the enterprise group is the group of legal entities falling under common ownership and control. A management unit is generally the highest unit within an enterprise group for which sub-annual accounts of income, operating expenses and assets are maintained. An establishment is now generally defined as the smallest unit within a management unit for which annual accounts of income, operating expenses and assets are maintained, while the location is now the unit used to record separate geographic entities. Normally, employment is the only statistical information requested at the location level.

A concern for the ABS in defining business units is to try to achieve industry homogeneity within units, for example to separate out manufacturing and wholesaling activity within one management unit. This is not always possible and where this occurs each unit is coded to its industry of predominant activity in the knowledge that homogeneity is affected.

Using a common register of hierarchical units for most ABS business collections improves the comparability of results from different ABS collections.

Coverage

An important feature of any list of businesses used to represent the business population is its completeness or coverage. To collect information from businesses, you must know they exist. Even in sample surveys, where only a small percentage of businesses are asked to supply data, it is important to know of all the units in the business population, so the sampled data can be weighted up to represent them correctly.

The most common problem in this area is undercoverage. If some business units are missing from the register, they cannot be represented in the resultant statistics. Published statistics then (usually) under-state the true situation. Both censuses (such as the annual manufacturing census) and surveys (such as the monthly retail survey) are vulnerable to undercoverage.

Coverage sources for the business register

The Australian Tax Office (ATO) is the primary updating source for the register. It is a comprehensive source of name and address information for businesses that employ staff.

All businesses with employees are required to send income tax instalments from their employees' pay to the ATO under the 'pay as you earn' (PAYE) system. There are two ways by which this can be done. Most employers are registered as group employers and send the instalments on behalf of their employees directly to the ATO. Employers with fewer than 10 employees have the option of operating under the tax-stamp book system, whereby they

purchase tax-stamps as required and enter them into the appropriate records.

For some years, the ATO has given the ABS access to paper records of the names and addresses of all businesses registering as new group employers or applying to operate under the tax-stamp book system. (By law, this is a one-way flow of information. The ABS does not provide details of any individual businesses to the ATO.) This information from the ATO has notified the ABS of most businesses which start employing staff. However, clerically identifying and transcribing the very large volume of paper records has meant that some new businesses have failed to be included on the business register. The missing businesses are described as 'leakage' from the register.

Recent changes to the register updating processes

The ABS now regularly obtains a computer file listing all businesses registered as group employers with the ATO (not just those registering as new group employers). From December 1990, the ABS has received such a file every three months.

Businesses that appear on the ATO file for the first time are sent a form by the ABS to obtain more complete information than is recorded on the file. The ABS requests name and address, business type, industry, structure and employment data. Identifying new businesses by electronic means also offers the prospect of their speedier inclusion onto the register.

Most importantly, however, it means that the leakage problems of the old paper based system are being identified and corrected, and will not occur again. When the new system first came into operation, earlier this year, the ABS undertook an intensive study of the leakage from the register that had accumulated over the last decade. In some industries, up to 4 per cent of businesses (mostly small) had been missed from the register. Published time series data are now being corrected to compensate for this leakage. Detailed analysis indicated that the level of under-coverage due to leakage had been very stable over time. Thus, even though level estimates were slightly understated in the past, the movements from period to period were not greatly affected.

The ATO has strongly encouraged businesses using the tax-stamp book system to move to the group employer system. The tax-stamp system suffers from the same leakage problems that the paper-based group employer system used to have.

Duplication on the register

Duplication of a business on the register has the opposite effect to undercoverage. If a single business appears on the business register more than once, then the resultant statistics will be overstated. Duplication can occur when information about the existence of a business is obtained from more than one source, and the ABS fails to detect that fact when updating the business register. Typical reasons may be variations in the spelling of a business name or the existence of several business addresses. Duplication can also occur when a business changes ownership or structure. The new ownership or structure may be added to the register without the older, outdated entry being removed.

Duplication is not a serious problem for censuses, where a form is sent to every unit that appears on the population frame. Respondents will usually inform the ABS if they have received two forms. However, many of the regular (monthly or quarterly) economic indicators produced by the ABS are based on sample surveys. Sample surveys are vulnerable to errors caused by duplication on the business register. Because only a small percentage of the units are sent forms, the duplication is quite likely to remain undetected, and to result in overestimation.

One way of checking the register for duplication is to take a group of businesses from the register

(for example, all businesses in a particular area) and attempt to match them back to the register (using even more stringent procedures than are normally employed). If a business is found more than once then duplication has occurred. Checks of this nature indicate that the occurrence of two identical register entries for the same business is very rare. Because of the relatively dynamic nature of (particularly small) business ownership, there are occasions when the new ownership or structure is recorded on the register before the outdated entry is removed. This is usually a short term problem, caused by slight delays between adding the 'new' business to the register, and removing the 'old'. The areas within the ABS responsible for conducting statistical collections carefully check the population frames they draw from the register before despatching.

Changes in estimates caused by changes on the register

Users of economic statistics often pay more attention to movements in a statistical series than to the latest figure in its own right. Any change in the major economic indicators can be considered as having two components; one due to any changes in the average level of reported activity and another due to net changes in the numbers of businesses in the population. If, in net terms, the number of businesses in operation increases, then the published estimates will also increase (all other things being equal). Similarly, a net decline in the number of operating businesses will tend to make the estimates fall.

It is important to note that it is the net change that is relevant. The population of businesses is quite dynamic, and relatively small net changes occur as the difference between quite large increases and decreases. For example, a recent study of the register suggested that around 12 per cent of the businesses on the register will become defunct each year, and be replaced (more or less) by new businesses.

Estimating for defunct businesses

The ABS measures changes in the average level of activity by despatching forms to samples of businesses on a regular monthly, quarterly or annual basis. Defunct businesses are detected and accounted for appropriately in the published statistics almost immediately. In theory they should not provide the same problem for estimates that undercoverage and duplication do. This is true for censuses because the defunct businesses in the scope of the collection are discovered during processing. It is also true for sample surveys, even though only a small percentage of businesses are sent forms. A business which is in sample but has ceased operations remains in sample but contributes a zero value to the estimates. These defunct businesses in the sample represent all the defunct businesses in the population (in exactly the same way that the operating businesses in the sample represent all the operating businesses in the population).

In practice, it can be difficult to distinguish between businesses which are defunct and businesses which are operating but not replying to the ABS's forms. The ABS puts considerable effort into following up non-respondents. Nonetheless, if mistakes are made and non-respondents are incorrectly treated as defunct businesses, then the published figures which result understate the true situation.

Keeping the business register up to date by removing defunct businesses is a difficult task. The major problem is one of identifying which businesses, of all those recorded on the register, have ceased operating. In industry sectors where a regular census is conducted (for example, agriculture, manufacturing or mining), it is relatively straightforward to maintain the currency of the register (provided sufficient effort is put into following up non-respondents). However, in some industry sectors (retail, for example) the interval between censuses may be as much as five years, while in other sectors (road transport, for example) a complete census may never have been conducted. Various sample surveys do cover these sectors but because relatively few businesses are actually contacted, they do not provide enough information to keep the register up to date.

Recent developments in the identification of defunct businesses

The business register currently records many businesses which no longer exist. Estimates produced from ABS sample surveys suggest that over the last decade the number of defunct businesses still recorded on the register has risen to as high as 25 per cent of all the recorded businesses. These defunct businesses are concentrated in the smaller employment size ranges and are spread across most industries except for agriculture, manufacturing and mining. The ABS has recently conducted a special 'units survey' of all the smaller businesses recorded on the register. For businesses still operating, this will provide more up to date information about their size, industry and structure. It will also identify many of the businesses no longer operating. It is expected that about 200,000 outdated entries will be removed from the register.

Conducting a units survey of this magnitude has been costly (since all businesses, not just the defunct ones, had to be surveyed). Without subsequent follow up action, the number of defunct businesses recorded on the register could rapidly build up again. As mentioned earlier, from December 1990 the ABS has been regularly receiving a computer file listing all businesses registered as group employers with the ATO. Businesses which disappear from the computer files are likely to have ceased operation, and it is intended to use this information to identify defunct businesses on the register in a timely way.

Lags in adding new businesses to the register

It can take six to twelve months for a new business to appear on the register and begin contributing to published statistics. (This is in contrast to businesses ceasing operation. These affect published statistics almost immediately, even though it may be some time before they are actually removed from the register.) The register updating process has several steps, each of which can contribute to the lag: the business has to register as a group employer and be added to the ATO files; the ABS has to receive an updated computer file from the ATO, detect any changes since the last file, check that the business has not already been added to the register from some other source, contact the business to ascertain details of its size, structure, industry etc. before finally updating the register. There may be a further delay before the business is included in the population frame for a statistical collection.

When the number of businesses in the economy is stable, all this has little effect on the published statistics. However, when the number of businesses is contracting or expanding, the delay in adding new businesses to the register may cause the published statistics to lag economic events.

For example, if there is an upturn in the economy, this is likely to be reflected in three ways: increased activity for live units, an increased number of new units and a decreased number of units becoming defunct. Survey activity will immediately pick up the increased activity for live units and the decreased number of units becoming defunct. However, there will be a lag in picking up the increased number of new units, leading to a small understatement of the extent of the upturn, and a time lag for the full picture to emerge.

For a downturn, on the other hand, there will be a decreased level of activity for live units, together with an increased number of units becoming defunct, with both these aspects being reflected immediately in the statistics produced. In addition, there may be a slow-down in the rate at which new businesses come into existence and it may take six to twelve months for published statistics to reflect the changed rate accurately.

Changes in the register updating system can cause spurious movements in published statistics. Suppose, for example, that the ABS succeeded in eliminating the lag in adding new businesses to the register. When this occurred, there would be an apparent increase in the number of new businesses coming onto the register, as the 'backlog' of delayed updates was cleared. If the lag

were to increase, there would be an artificial decrease in the number of new businesses coming onto the register. This would cause a decrease in the published statistics until the updating system stabilised at the new time lag.

Some variation in the updating lag is unavoidable. In almost all cases, the resulting fluctuations in published statistics are minor, and smaller than the natural variation in the figures. Nonetheless when (as now) the ABS improves the updating system, careful attention is paid to the possible consequences for the published statistics and, in particular, for published movements. If it appears likely that the published statistics will be affected, users are advised or adjustments made.

Changes to the updating cycle are not totally within the control of the ABS. The ATO is in the middle of a major upgrade to its computing equipment and a very significant revision to its processing systems. These changes have the potential to affect register updates. Careful monitoring will be necessary over the next few years, to ensure both that there are no untoward effects on published statistics and that opportunities for further improvements to the timeliness of updates are realised.

Focus on employing units

Ideally the register should contain all businesses. However, there is no comprehensive source to identify small businesses without paid employees. Rather than have an uncertain and fluctuating coverage of non-employing businesses, the scope of the register has been 'defined to include only businesses with employees. For most industries, non-employing businesses contribute a relatively small proportion of the total economic activity and an even smaller proportion of the change in economic activity from period to period.

An exception has been made for agricultural businesses, which are included on the register regardless of whether they employ staff, provided they have an estimated value of agricultural operations of \$5,000 or greater. The reason is that a significant proportion of total agricultural production is contributed by farms with no paid employees. For the agriculture industry, the annual agricultural census provides the main mechanism for keeping the listing of non-employing businesses up to date.

As part of the decision to restrict the register to employing businesses, non-employing businesses that had been previously identified were removed, apart from those agricultural businesses mentioned above.

Establishment of specialist contact officers for large businesses

Although the ATO is a good source of updates for the register, it does not provide much information about the relationships between businesses. Since most businesses operate from a single location and have a very simple structure, this does not usually matter much. However, the largest 700 enterprise groups account for about 35 per cent of employment in Australia. Over the past decade, there has been an increasing incidence of takeovers and restructuring activity amongst large businesses. The ABS has established specialist staff in each State to keep the register up to date with respect to the structures of the largest businesses. To achieve this, these staff have established programs of personal visits and ongoing contact with each large business.

Public sector units

The public sector is another area where there has been substantial change in the structure of 'businesses' in recent times. Examples include the extensive restructuring of general government at Commonwealth and State level, the move to corporatisation and privatisation and the major restructuring of tertiary education. To correct the growing inaccuracies in this segment of the register, the ABS has recently conducted a major program to update its coverage and accuracy.

The business register as a statistical database

The register has long been a useful source of statistical data in its own right, providing statistical aggregates about the type of legal organisation, structure, location, industry classification and employment of businesses. Such information may be used to generate business profile statistics, especially classified by small area such as local government areas or postcodes. The business register is a unique source for such information.

In the past, the statistics derived from the business register have always had to be used with considerable reservations because of the problems of undercoverage, defunct units and so on, as described above. When the current program of upgrading is completed (expected to be toward the end of 1991), these reservations will be minimised and the register will be a primary source of economy-wide business statistics classified by small area.

Summary

The ABS maintains a central, integrated register of businesses. This register defines the population of businesses to which most published economic statistics refer. Important features of the register are its coverage, the amount of duplication on it, the number of defunct businesses still recorded on it, any lags in updating it, and the accuracy of the business structures it records. Each can affect the published statistics.

The ABS has recently improved the manner in which information from the ATO is used to add new businesses to the register. At the same time, some long term leakage from the register, which had caused level estimates to be slightly understated but had not affected movement estimates, has been corrected.

It can take between six months and a year for new businesses to appear on the register and contribute to published statistics. These lags and changes in them, have the potential to affect the published statistics. The ABS monitors the register updating cycle closely, especially when, as at present, changes to the system are in progress.

This feature article was contributed by Geoff Lee and Leon Pietsch, ABS.

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